

Amendments to the Claims:

This listing of claims will replace all prior versions, and listing, of claims in the application.

Listing of Claims:

1. (ORIGINAL) An apparatus for combinatorial chemistry on a substrate comprising:

a manifold having one or more outlets positioned to deliver one or more chemicals to the substrate; and

a linear drive for moving the substrate below the manifold.

2. (ORIGINAL) The apparatus of claim 1, wherein the manifold is defined further as comprising one or more outlets that form linear delivery spray heads.

3. (ORIGINAL) The apparatus of claim 1, wherein the manifold delivers one or more chemicals for nucleic acid synthesis to the substrate.

4. (ORIGINAL) The apparatus of claim 1, wherein the manifold delivers one or more chemicals for peptide synthesis.

5. (ORIGINAL) The apparatus of claim 1, wherein the manifold delivers one or more chemicals for nucleic acid synthesis.

6. (ORIGINAL) The apparatus of claim 1, wherein the manifold delivers one or more chemicals for oligomer synthesis.

7. (ORIGINAL) The apparatus of claim 1, wherein the manifold is further defined as one or more manifolds comprising:

an acetonitrile manifold;

an oxidizer manifold;

a capping reagent manifold;

one or more monomer manifolds; and

a deblock manifold.

8. (ORIGINAL) The apparatus of claim 1, further comprising a mask containing one or more holes positioned between the manifold and the substrate.

9. The apparatus of claim 1, wherein the substrate comprises a chemically nonreactive material.

10. (ORIGINAL) The apparatus of claim 1, wherein the substrate comprises Delrin.

11. (ORIGINAL) The apparatus of claim 1, wherein the substrate comprises Polyethylene.

12. (ORIGINAL) The apparatus of claim 1, wherein the substrate comprises Fiberglass.

13. (ORIGINAL) The apparatus of claim 1, wherein the substrate comprises Glass Micro-fiber filter (GMFF).

14. (ORIGINAL) The apparatus of claim 1, wherein the substrate comprises a material coated with a chemically non-reactive coating.

15. (ORIGINAL) The apparatus of claim 1, wherein the substrate comprises a top surface and wherein the top surface is slanted.

16. (ORIGINAL) The apparatus of claim 1, wherein the substrate comprises one or more wells.

17. (ORIGINAL) The apparatus of claim 1, wherein the substrate comprises a multi-well plate.

18. (ORIGINAL) The apparatus of claim 1, wherein the substrate comprises a multi-well filter plate.

19. (ORIGINAL) The apparatus of claim 16, wherein the one or more wells of the plate further comprise a slanted interior edge.

20. (ORIGINAL) The apparatus of claim 16, wherein the plate is further define as a multi-well filter plate and comprises:

a top and a bottom plate containing one or more wells; and

a semi-permeable membrane positioned between the top and bottom plates.

21. (ORIGINAL) The apparatus of claim 16, wherein the wells comprise a slanted cross-section.

22. (ORIGINAL) The apparatus of claim 16, wherein the wells comprise a slanted cross-section and a frit.

23. (ORIGINAL) The apparatus of claim 16, wherein the wells comprise first and second slanted portions.

24. (ORIGINAL) The apparatus of claim 16, wherein the wells comprise first and second slanted portion, and wherein at least one frit is fixed within the first or second slanted portion of the well.

25. (ORIGINAL) The apparatus as in claim 16, wherein each of the one or more wells further comprise a synthesis substrate.

26. (ORIGINAL) The apparatus of claim 1, further comprising a computer connected to and controlling the linear drive.

27. (ORIGINAL) The apparatus of claim 1, further comprising one or more chemical reservoirs in fluid communication with one or more manifolds.

28. (ORIGINAL) The apparatus of claim 1, further comprising a computer connected to and controlling one or more valves that control the flow of fluid between the one or more chemical reservoirs with the one or more manifolds.

29. (ORIGINAL) The apparatus of claim 1, further comprising:

one or more chemical reservoirs in fluid communication with the one or more manifolds; and

one or more valves control the flow of fluid from the chemical reservoirs to the one or more manifolds.

30. (ORIGINAL) The apparatus of claim 1, further comprising a mask positioned between the manifold and the substrate.

31. (ORIGINAL) The apparatus of claim 30, wherein the mask positioned between the manifold and the substrate is layered on the substrate.

32. (ORIGINAL) The apparatus of claim 30, wherein a mask is positioned further comprises one or more through-holes generally over one or more reaction sites of the substrate.

33. (ORIGINAL) The apparatus of claim 30, wherein the mask comprises Teflon™.

34. (ORIGINAL) The apparatus of claim 30, wherein the mask comprises Teflon™ between 0.002 and 0.25 inches thick.

35. (ORIGINAL) The apparatus of claim 30, wherein the mask comprises polyethylene.

36. (ORIGINAL) The apparatus of claim 30, wherein the mask comprises fiberglass.

37. (ORIGINAL) The apparatus of claim 30, wherein the mask comprises Delrin.

38. (ORIGINAL) The apparatus of claim 30, wherein the mask comprises polypropylene.

39. (ORIGINAL) The apparatus of claim 30, wherein the mask comprises single-sided Teflon™ tape.

40. (ORIGINAL) The apparatus of claim 30, wherein the mask comprises molded polypropylene and further comprising divots that generally match one or more wells of a substrate.

41. (ORIGINAL) The apparatus of claim 30, wherein the mask comprises molded polyethylene and further comprising divots that generally match one or more wells of a substrate.

42. (ORIGINAL) The apparatus of claim 30, wherein the mask comprises a magnetically attractive material.

43. (ORIGINAL) The apparatus of claim 30, wherein the mask comprises an electrostatic charge opposite an electrostatic charge on the substrate.

44. (ORIGINAL) The apparatus of claim 1, further comprising a vacuum in communication with the substrate.

45. (ORIGINAL) The apparatus as in claim 1, wherein the substrate comprises one or more reactive group protected from a chemical reaction by one or more removable protecting groups.

46. (ORIGINAL) The apparatus of claim 45, wherein the one or more removable protecting groups is removed by addition of a deblocking reagent.

47. (ORIGINAL) The apparatus of claim 45, wherein the substrate comprises one or more monomers for nucleic acid synthesis.

48. (ORIGINAL) The apparatus of claim 45, wherein the substrate comprises one or more monomers for peptide synthesis.

49. (ORIGINAL) The apparatus of claim 45, wherein the substrate comprises one or more monomers for peptide nucleic acid synthesis.

50. (ORIGINAL) The apparatus of claim 45, wherein the substrate comprises one or more monomers for carbohydrate synthesis.

51. (ORIGINAL) The apparatus of claim 45, wherein the substrate further comprises a linker.

52. (ORIGINAL) The apparatus of claim 45, wherein the substrate comprises a small molecule library.

53. (ORIGINAL) The apparatus of claim 1, wherein the substrate comprises 6, 12, 48, 96, 384, 864, 1,536 or more reaction sites.

54. (ORIGINAL) The apparatus of claim 1, wherein the substrate is rectangular.

55. (ORIGINAL) The apparatus as in claim 1, wherein substrate comprises one or more wells, and the one or more wells are canted.

56. (ORIGINAL) An apparatus for combinatorial chemistry comprising:

a substrate comprising one or more reaction sites;

a mask positioned on the substrate;

a one or more manifolds positioned to deliver one or more chemicals to at least a portion of the substrate; and

a linear drive for moving the substrate and the mask below the one or more linear manifolds.

57. (ORIGINAL) An apparatus for combinatorial chemistry comprising:

a substrate comprising one or more reaction sites;

a mask comprising one or more through holes positioned generally over the one or more reaction sites of the substrate;

a one or more linear manifolds positioned to deliver one or more chemicals to the substrate;

a linear drive for moving the substrate and the mask below the one or more linear manifolds; and

a vacuum below the one or more reaction sites of the substrate.

58. (ORIGINAL) An apparatus for synthesizing oligomers comprising:

a substrate comprising one or more reaction sites;

a mask comprising one or more through holes positioned generally over the one or more reaction sites of the substrate;

one or more linear manifolds positioned to deliver one or more chemicals to the substrate comprising:

an acetonitrile manifold;

an oxidizer manifold;

a capping reagent manifold;

one or more monomer manifold; and

a deblock manifold;

a linear motion table that moves the substrate and the mask below the one or more manifolds; and

a vacuum below the one or more reaction sites of the substrate.

59. – 60. (WITHDRAWN)

61. (ORIGINAL) A mask for chemical synthesis comprising:

a non-reactive sheet having a top and a bottom surface;

one or more through-holes that form an array that generally match the position of one or more wells of a substrate.

62. (ORIGINAL) The mask of claim 61, wherein the substrate comprises a multi-well plate.

63. (ORIGINAL) The mask of claim 61, wherein the substrate comprises a multi-well filter plate.

64. (ORIGINAL) The mask of claim 61, wherein the mask comprises a substantially chemically non-reactive material.

65. (ORIGINAL) The mask of claim 61, wherein the mask comprises a Teflon™-coated polymer.

66. (ORIGINAL) The mask of claim 61, wherein the mask comprises polyethylene.

67. (ORIGINAL) The mask of claim 61, wherein the mask comprises fiberglass.

68. (ORIGINAL) The mask of claim 61, wherein the mask comprises Delrin.

69. (ORIGINAL) The mask of claim 61, wherein the mask comprises polypropylene.

70. (ORIGINAL) The mask of claim 61, wherein the through-holes are further defined as having one or more nozzles on the bottom surface.

71. (ORIGINAL) The mask of claim 70, wherein the through-holes are further defined as having one or more nozzles on the bottom surface, wherein the nozzles have an angle that matches the angle of the wells in the multi-well plate.

72. (ORIGINAL) The mask of claim 70, wherein the through-holes are further defined as having one or more nozzles on the bottom surface, wherein the nozzles have an angle that is more than the angle of the wells in the multi-well plate.

73. (ORIGINAL) The mask of claim 70, wherein the through-holes are further defined as having one or more nozzles on the bottom surface, wherein the nozzles have an angle that is less than the angle of the wells in the multi-well plate.

74. – 86. (WITHDRAWN)